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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,019	03/10/2004	Hidehiko Soyama	119040	2173
25944	7590	06/28/2007		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER LANGMAN, JONATHAN C	
			ART UNIT 1775	PAPER NUMBER
			MAIL DATE 06/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/796,019

Applicant(s)

SOYAMA ET AL.

Examiner

Jonathan C. Langman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-14 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/03/2004, 3/10/2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, and 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuo et al, (JP publication 2002-202531) in view of Takeuchi et al., (U.S. 6,108,062).

Regarding claims 1, 2, 6-8, Yasuo et al. teach a image display medium that comprises a pair of substrates, enclosed min the space between the pair of substrates is two particle dispersions opposing each other. One of the particle dispersions is positively charged and the other is negatively charged and the particle groups each have a different color. The value of coefficient of variation in the particle size distribution of both particle dispersions is 15% or less, which overlaps the instantly claimed range of 60% or less (Yasuo et al., Abstract). Yasuo et al. teach that the particle dispersions comprise at least a resin and a colorant in paragraph [022], and go on to further teach the emulsification of the emulsification of calcium carbonate mixed with a resin and a colorant [022]), and teach that the particle dispersions may be obtained by emulsion polymerization [0042]). Yasuo et al. go on to teach that the particles were produced in an emulsifier as seen in Figure 3, producing an emulsion of

calcium carbonate particles [0066]-[0070], however, they are silent to the size of the calcium carbonate particles. Takeuchi et al. teach a method of producing particle dispersions for display devices, that are of fine particle size and a narrow particle size distribution. Takeuchi teach an emulsion having an even particle diameter prepared through the use of a porous membrane having a narrow pore diameter distribution. The average particle diameter of a dispersed particle of the liquid crystal is preferably 1 to 5 microns (Takeuchi et al., col. 11, lines 30-45). Takeuchi et al. go on to teach that the dispersion medium is PVA, a hydrophilic organic and a carboxyl group material (col. 11, lines 50). A particle size of 1 micron overlaps the applicant's instantly claimed range of 0.05-1 micron. However, Takeuchi are silent to the exact make up of the emulsifier. It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use the calcium carbonate emulsifier of Yasuo et al., in the emulsion process of Takeuchi et al. in order to obtain a narrow particle size distribution and small particle sizes, of 1 micrometer of emulsifying materials, as Takeuchi et al. have shown the benefits of using a smaller particle and a narrow size distribution.

Regarding claim 3, Takeuchi et al. teach in examples 1, an emulsifier that falls within the applicants claimed range of 2-100 wt percent.

Regarding claim 9, Yasuo et al. teach a material for the substrates is selected from the group consisting of aluminum, stainless steel, nickel, chromium, alloy crystals thereof, Si, GaAs, GaP, GaN, SiC, and ZnO [0051].

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Regarding claim 10, Yasuo et al. teach substrates are produced by subjecting to an electrically conducting treatment an insulating material selected from the group consisting of a polymer film, glass, quartz and ceramics [0052].

Regarding claim 11, Yasuo et al. teach the substrates comprise a transparent conductive material selected from the group consisting of indium tin oxide, zinc oxide, tin oxide, lead oxide, indium oxide, and copper iodide [0053].

Regarding claim 12, Yasuo et al. teach the substrates have disposed thereon protective layers made of a material selected from the group consisting of polycarbonate resin, vinyl silicone resin and fluorine-group containing resin [0056].

Regarding claim 13, Yasuo et al. teach the particles having positive or negative chargeability have a central particle size ranging from 3 to 30 microns [0040]).

Regarding claim 14, Yasuo et al. teach an electric field generating unit is provided in order to generate in the void between the pair of substrates an electric field corresponding to the image [0092]).

Allowable Subject Matter

Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan C. Langman whose telephone number is 571-272-4811. The examiner can normally be reached on Mon-Fri 9:00 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL




JENNIFER C. MCNEIL
SUPERVISORY PATENT EXAMINER
6/25/17